REMARKS

Applicant appreciates the thorough examination of the present application that is reflected in the Official Action of April 19, 2002. Applicant further appreciates the indication that Claim 17 is allowable if rewritten in independent form. For the convenience of the Examiner, the points raised in the Official Action will be responded to in the order in which they were raised.

The Objections in Sections 1 and 2 of the Official Action Have Been Overcome

Claims 4, 15, and 26 have been canceled. Claims 1, 12, 16, and 23 have been amended to more clearly provide antecedent basis for "using the scaled pilot despread values". Claim 39 has been amended to depend from Claim 38. Applicant submits that the claims as amended have overcome the objections raised in sections 1 and 2 of the Official Action.

The Rejection Under 35 USC §112 Has Been Overcome

Claims 6, 16, 28, 34, 36, and 38 have been amended to remove the recitations to scaling the traffic despread values and the channel estimates by the scaled factors. These amendments render the rejections moot. However, Applicant wishes to note that ample support for all of the recitations is found in the Summary of Invention section of the Specification, and the rejection itself indicates how one skilled in the art would modify the drawings, if necessary, to support these recitations.

For these reasons, Applicant requests that the rejections of Claims 6, 16, 28, 34, 36, and 38 under 35 USC §112, and the related objection to the Specification, be withdrawn. Applicant has now overcome the sole remaining bases for rejection of Claims 6, 28, and 34-39, and requests that these claims be allowed.

Claims 1, 5, 7-9, 12, 16, 18-20, 23, 27, and 29-31 are Patentable Over Bruckert et al.

Claim 1 stands rejected under 35 USC §102(e) as being anticipated by Bruckert et al (U.S. Patent 5,812,542, hereinafter "Bruckert"). Claim 1 has been

amended to overcome the Claim Objections in Section 2 of the Official Action, and to clarify that the **pilot despread values are scaled before the channel responses are estimated** from the scaled pilot despread values.

In sharp contrast, Bruckert instructs that at "step 258, the signals received from steps 253, 255, 256 and 257 are smoothed over time ...". (Bruckert, Col. 9, lines 19-20). At step 259 "the smoothed pilot signals p3 and p'3 from base station 106 are averaged **to produce an estimate** of the pilot signal". (Bruckert, Col. 9, lines33-35). At step 261, weighting coefficients c1, c2 and c3 are determined from the smoothed pilot signals, p1, p2, p3 using three disclosed equations. (Bruckert, Col. 9, lines 39-55). At step 262, "the first plurality of **traffic channels x1, x2 and x3** generated by the first rake receiver 126 **are weighted** by the first plurality of complex weighting coefficients c1, c2 and c3". (Col. 11, lines 5-8). Consequently, Bruckert teaches away from Claim 1 by describing, and showing in FIG. 2, that estimates of pilot signals are formed (step 259) **before** traffic channels are weighted (step 262)

The Official Action erroneously characterizes the description of Bruckert as:

> The mathematical expressions on col. 9, lines 41-54 clearly teach that the channel responses are estimated using the scaled pilot despread values (see for example, Y_{104}xp1). The block 261 in Fig. 2 is used for estimating the channel responses.

(Official Action, page 8, section 9). However, the referenced mathematical expression forms "complex weighting coefficients c1, c2, and c3", not estimates of channel responses. (Bruckert, Col. 9, lines 39-40). Instead, as described above, Bruckert instructs that estimates are formed at step 259 which are used to form weighting coefficients at step 261, and that are **later used to weight traffic channels**. Bruckert does not describe or suggest either a **scaling of pilot despread values**, or performing such **scaling before estimating channel responses**, as recited in Claim 1.

For these reasons, Claim 1 is patentable over Bruckert.

Claims 12, 16, and 23 have been amended to include similar features to Claim 1 and are patentable over Bruckert for substantially the same reasons as Claim 1.

Claims 5, 7-9, 18-20, 27, and 29-31 are patentable as depending from allowable independent claims.

CONCLUSION

Applicant now has shown that all of the claims are patentable, and have addressed the Examiner's concerns. Accordingly, Applicant respectfully requests entry of this Amendment and Request for Reconsideration and allowance of the present application. Alternatively, Applicants respectfully request entry of this Amendment and Request for Reconsideration as narrowing the issues for further consideration on appeal.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box AF, Commissioner for Patents, Washington, DC 20231, on December 16, 2002.

Sloan Hobbs
Date of Signature: December 16, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Sir:

The following is an addendum to the concurrently filed amendment in response to an Official Action dated October 18, 2002 in the above referenced application. This addendum includes a marked-up version of the changes made to the claims by the present amendment.

In the Claims:

1. (Amended Three Times) A method of processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, comprising the steps of:

receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

scaling the pilot despread values by the scale factors to form scaled pilot despread values;

estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

scaling the pilot despread values by the scale factors to form scaled pilot despread values, and such that the step of combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

Claim 4 has been canceled.

6. (Amended Two Times) A method of processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, comprising the steps of:

receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

scaling the pilot despread values by the scale factors to form scaled pilot despread values;

estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

scaling at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the step of combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

wherein the step of forming scale factors comprises the steps of:

forming an error signal using the pilot channel despread values and the traffic channel despread values; and

computing a scale factor based on the error signal.

12. (Amended Three Times) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

means for receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

means for correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

means for forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

means for scaling the pilot despread values by the scale factors to form scaled pilot despread values;

means for estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

means for combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

means for scaling pilot despread values by the scale factors to form scaled pilot despread values, and such that the means for combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

Claim 15 has been canceled.

16. (Amended Three Times) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

means for receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

means for correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

means for forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

means for scaling the pilot despread values by the scale factors to form scaled pilot despread values;

means for estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

means for combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

means for scaling the pilot despread values by the scale factors to form scaled pilot despread values, and such that the means for combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

wherein the means for forming scale factors comprises:

means for estimating power on a pilot channel;

means for estimating power on a traffic channel; and

means for determining scale factors based upon the estimated powers on the pilot channel and the traffic channel.

23. (Amended Three Times) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

a receiver that receives data samples from the plurality of traffic channels and the plurality of pilot channels;

a correlator that correlates the received data samples to spreading codes to produce pilot despread values and traffic despread values;

a scale factor estimator that estimates scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

a scaler that scales the pilot despread values by the scale factors to form scaled pilot despread values;

a channel coefficient estimator that estimates channel responses using the scaled pilot despread values to produce channel coefficient estimates;

a combiner that combines the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

a scaler that scales the pilot despread values by the scale factors to form scaled pilot despread values, and such that the combiner obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

Claim 26 has been canceled.

28. (Amended Three Times) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

a receiver that receives data samples from the plurality of traffic channels and the plurality of pilot channels;

a correlator that correlates the received data samples to spreading codes to produce pilot despread values and traffic despread values;

a scale factor estimator that estimates scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

a scaler that scales the pilot despread values by the scale factors to form scaled pilot despread values;

a channel coefficient estimator that estimates channel responses using the scaled pilot despread values to produce channel coefficient estimates;

a combiner that combines the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

a scaler that scales at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the combiner

obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels; and

an error signal generator that is responsive to the pilot channel despread values and the traffic channel despread values.

34. (Once Amended) A method of processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, comprising the steps of:

receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

scaling the pilot despread values by the scale factors to form scaled pilot despread values;

estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

scaling at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the step of combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

wherein the step of forming scale factors comprises the steps of:

estimating power on a pilot channel;

estimating power on a traffic channel;

dividing the estimated power on a traffic channel by the estimated power on the pilot channel to produce a power ratio; and

obtaining a square root of the power ratio to produce the scale factor.

36. (Once Amended) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

means for receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

means for correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

means for forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

means for scaling the pilot despread values by the scale factors to form scaled pilot despread values;

means for estimating channel responses using the scaled pilot despread values to produce channel coefficient estimates;

means for combining the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to[information symbols, using the channel coefficient estimates; and

means for scaling at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the means for combining obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

wherein the means for forming scale factors comprises:

means for estimating power on a pilot channel;

means for estimating power on a traffic channel;

means for dividing the estimated power on a traffic channel by the estimated power on the pilot channel to produce a power ratio; and

means for obtaining a square root of the power ratio to produce the scale factor.

38. (Once Amended) A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

a receiver that receives data samples from the plurality of traffic channels and the plurality of pilot channels;

a correlator that correlates the received data samples to spreading codes to produce pilot despread values and traffic despread values;

a scale factor estimator that estimates scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

a scaler that scales the pilot despread values by the scale factors to form scaled pilot despread values;

a channel coefficient estimator that estimates channel responses using the scaled pilot despread values to produce channel coefficient estimates;

a combiner that combines the traffic despread values, using the channel coefficient estimates, to obtain detection statistics that correspond to [information symbols, using the channel coefficient estimates; and

a scaler that scales at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the combiner obtains detection statistics that correspond to] the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

wherein the scale factor estimator comprises:

a pilot channel power estimator;

a traffic channel power estimator;

a divider that is responsive to the pilot channel power estimator and to the traffic channel power estimator; and

a square root calculator that is responsive to the divider.

39. (Once Amended) A system according to Claim [37] 38 wherein the traffic channel power estimator comprises an equivalent full rate power traffic channel estimator.